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ABSTRACT

This paper offers practical assistance for the development of high quality playgrounds for infants, toddlers, and preschoolers in child care. Discussion of the value of play in child development and the benefits of outdoor play is followed by a consideration of the ways children use playgrounds in exercise, construction, group and dramatic forms of play, and games with rules. The curriculum and outdoor environment are considered. Discussion of playground development focuses on site selection and general layout; selection of play equipment; the process of cutting costs; playground safety; and liability for injuries to children resulting from lack of reasonable care. Child care directors' three major options for developing playgrounds are: (1) designing and building with volunteer labor and professional supervision; (2) using local custom designers and builders with proven expertise; and (3) using manufacturers in design and equipment selection. The first option is the least expensive and usually carries greater risk for legal liability. Any of the options can result in playgrounds with high play value and low safety risk; however, if poorly planned and implemented, any of these options can result in uninspired, sterile, and hazardous playgrounds. Definitions of different types of playground equipment are provided, as are diagrams of typical play areas for children from 6 to 24 months, 24 to 36 months, and 3 to 6 years of age. (27 references) (RH)

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Playgrounds for Infants, Toddlers, and Preschoolers

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"The country that once proudly proclaimed the pursuit of happiness as a decent and legitimate goal now feel apologetic if its children have fun" (Hymes, undated, p. 1).

The mild climate of Texas allows playgrounds to be friendly places for children during large segments of the day and for most days of the year. Children love to play outdoors, and they are attracted to playgrounds. During the current emphasis on academics, many question the propriety of play or the need for good school playgrounds, but a growing body of research and experience point to the value of play and play environments in children's intellectual, social, emotional, and physical development. This paper will highlight the values of play and offer practical assistance in developing high quality playgrounds for infants, toddlers, and preschoolers in organized child care settings.

The Value of Play in Child Development

A growing body of research supports the value of play in the young child's development, but an additional benefit of play is the spontaneous pursuit of fun. For this reason alone, it is important to provide children with ample opportunity (time, space, and materials) to play.

But there are many more reasons to plan for play in early childhood settings. While children are at play they are building diverse abilities of problem solving (Sylva, 1977), language (McCune-Nicolich, 1981), and creative use of materials (Dansky, 1980). Children develop manipulative skills (Pepler & Ross, 1981), social skills (Eisenberg & Harris, 1984), and motor skills (Poest, Williams, Witt, & Atwood, 1990; Seefeldt, 1984) through play. Playgrounds enhance motor development (Myers, 1985) and are superior to indoor settings for activities that are messy or loud (Greenman, 1985), and they offer a wide variety of sensory stimulation (Olds, 1987) such as textures, surfaces, sounds, and smells. Such stimulation is nourishment for the child's growing cognitive abilities (Bruner, 1972; Piaget, 1962).

Benefits of Outdoor Play

The benefits of outdoor play are extensive. Children have more room outdoors, and they need lots of room for movement and expression. The primary task of the toddler is to "learn to move and learn by moving" (Olds, 1989, 8-9). Subtle advantages ensue from freedom of movement. Since children may be allowed to run outdoors, rule breaking is reduced. Strains on children's developing social skills are lessened as children have more "personal" space and experience more options in relation to social settings. Emotional stress may thus be eased. Superhero play, because it is often very active, is more tolerable outdoors, and such play is very important to young children. However, teachers/caretakers should guide children away from extensive play with theme-specific war toys (Paley, 1984). Substituting materials that require children to create their own toys is a satisfactory alternative. Rough and tumble play that is friendly and non-violent also aids in children's development (Pellegrini, 1986).

Adults can allow children to be more noisy outdoors. This allows for fuller expression in play, much of which requires loud voices. It is hard for a princess to scream for help in an "inside voice." Music activities are well-suited for the playground for this same reason.

The caregiver can allow more messiness outdoors. Spills are of less concern, whether involving water, sand, paint, or play dough. Large blocks that must be limited in number to prevent clutter indoors can be spread out with impunity on the playground. This applies of course to other movable items such as trikes, sand toys, planks, boxes, and ladders. The availability of messy materials (sand, water) outdoors makes their use easier. Because sand and water can be made constantly available outdoors, their use saves efforts in transport and reduces logistical problems. Ease of use often dictates the inclusion of these important elements in teachers' plans.

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In a well-designed playground with a rich array of play options, the teacher will observe fewer behavior problems than in the typical classroom or in poorly designed playgrounds.

The outdoors offers more variety for children. Active versus quiet play and solitary versus group settings are available to the child. Variety surrounds the child in the many textures existing on the playground such as grass, stone, brick, plastic, metal, tree bark, leaves, sand, and water. Infinite varieties of lighting conditions are present outdoors along with temperature changes, degrees of openness, and weather changes. A wide selection of materials that are readily available in on-site storage, well-organized space, and carefully selected equipment offer ample opportunities for the types of play preferred by children. There is no need to wait in line or compete for play space and materials.

Children play differently outdoors compared to indoors. Complexity of language usage increases when children play outdoors (Tizard, Philps, & Plewis, 1976). Girls play more assertively on the playground than indoors (Yerkes, 1982), and boys engage in more dramatic play outdoors than indoors (Henniger, 1985). Both boys and girls are more active in gross motor (exercise) play outdoors (Campbell & Frost, 1985). This active play enhances motor development, fitness (Poest et al., 1990), and general health. Daily exposure to fresh air seems to reduce sinus infections and inhibit the spread of germs.

How Children Use Playgrounds

Children, especially preschoolers, are no more conscious of play than are adults of the act of breathing, but the withholding of either results in serious consequences. Children may not dwell on so encompassing an activity as play, but they act out their perceptions of the world through play and develop skills through play. By observing children's play, caregivers can better understand their developmental progress and make informed decisions about their developmental and instructional needs. For example, Frost and Strickland (1985) examined the choices of equipment by first grade children on the playground. The flexibility of materials was the common denominator among the preferred activities. These included, in order, sand play, wheeled vehicles, swings, loose parts play, and climbing/sliding. Other factors influencing the children's choices of play activity were complexity, challenge, responsiveness (how much impact the child could have on the object), variety, and novelty.

Adults also need to understand the different types of play that children engage in during the developmental or age range in question. The playful activities of infants are highly sensorial. They are exploring their immediate surroundings through sight, smell, sound, and tactile stimuli. Their world is one of grasping, sucking, shaking, pulling, and pushing. They need small, yet safe, manipulatable objects and textured spaces in which to creep and crawl. The toddler expands the world to include a wide range of movement and a greater variety of play objects, challenges, and expanded space. For late toddlers and preschoolers, the main types of play closely related to cognitive or intellectual development are exercise play, construction play, and dramatic play. Late preschoolers engage in games with rules.

Exercise Play

Within the space allotted for the playground, the design should provide for the varieties of play found among young children. One type of play commonly provided for on the playground is exercise play. This involves physical exercise and is the apparent objective of most park and public school equipment such as monkey bars and slides. For infants and toddlers, play environments should allow a maximum range of movement with low climbers, wide slides, predictable steps, and soft surfaces to compensate for the immature balance skills characteristic of this age group. For both infants, toddlers, and preschoolers, appropriate playgrounds will promote balance, running, jumping, spatial orientation, and coordination. Not until children are age six should equipment require considerable upper body strength. Thus, overhead ladders are more appropriate for after-schoolers (first graders and up). Toddlers can best use steps and ramps (with handrails) up to decks no more than 24" above ground. An appropriate design for this youngest group might include a wide slide (plastic, not metal, due to burn hazard) placed on a slope to eliminate falls. Such "natural" slopes should be gentle enough to maintain grass and allow children to roll down short distances. Fine motor skills as well as gross motor skills are encouraged in well-designed playgrounds. This is accomplished with objects to grasp and manipulate such as sand and sand toys, balls, blocks, construction materials, and gardening tools.

Construction Play

Another type of play is construction play that involves manipulations resulting in a product. Block construction, drawing, and other creative arts are examples of this type of play. On the playground, children engage in construction play in sandboxes with loose parts such as tires, boxes, and crates and through woodworking. Outdoor art activities are especially appropriate. Children of all ages need opportunities for construction play. A storage building for tools and loose parts is a critical feature on the playground intended to encourage construction play. Storage facilities make life easier for the caregiver and create opportunities for the children to assume responsibility in putting away play materials. Close supervision and instruction are required as children learn to use tools (e.g., hammers and saws). Over time they develop independence.

Dramatic Play

A third type of play that must not be overlooked in the design process is dramatic play (also called make-believe, pretend, and imaginative play). Many cognitive, social, and emotional benefits result from dramatic play or play involving elements of pretense. In so simple a drama as two children playing doctor and patient, the actors learn role perspective, verbal and nonverbal language skills, how to cooperate and take turns, and how to concentrate. They share information about real-world occupations, deal with common fears, learn about their own cultures, and practice problem solving. The preschooler needs sufficient time and appropriate materials to practice this most complex of behaviors. Infants and toddlers need the same opportunities to build the social and cognitive skills prerequisite to such behavior. The younger child needs clearly representative props with which to pretend such as cars with steering wheels that clearly denote their use. Preschoolers need varieties of parts and generic stage props such as boxes that can be arranged as a train or as a house. They use vehicle-like equipment such as cars, busses, and rocket ships in their dramatic play.

The need for inclusion of "magical places" on the playground is stressed by Talbot and Frost (1989). They point out the sterility and barrenness of most playgrounds while reminding us of our key childhood memories. Most of those memories include fairy tales, "magical" episodes, and favorite hideaways where time and adult authority are suspended momentarily. Both quiet places and rich, abundant environments provide opportunities for children to create magical places and at the same time enhance aesthetic appeal. Humans need beauty in their environments. This need is especially acute in children. Consider such qualities of nature as color, shape, light, density, form, variation, malleability, fluidity, and texture.

Games with Rules/Group Play

A fourth type of play to be accommodated on the playground is games with rules, better described as group play. While this type of play is easily recognized in a group of after-schoolers playing kickball, the beginnings of such behaviors reach back even to toddlerhood. Toddlers frequently play in parallel—in close proximity to others and using the same toys. At least two of every type of toy will not only promote parallel and group play but will also cut down on behavior problems. Toddlers are often observed in follow-the-leader play, imitating each others' movements. Adequate space and ample carrying or riding toys will facilitate successful play of this type.

Preschoolers also need open spaces to try out their social skills in group games. These episodes start and end quickly as the children learn to communicate rules to each other. The teacher's guiding hand and, at times, consoling arms can aid the children in their attempts. Again, plenty of loose parts like balls, parachutes, hula hoops, streamers, and wheeled toys give rise to and support group play.

Other materials that maximize the play value of the outdoor environment are sand or loose dirt for digging, water play materials (which may be elaborate or as simple as washtubs and clean, square plastic bottles), and facilities for plants and pets. Provisions that are conducive to children's play include appropriate shade and picnic tables for table activities, grassy knolls, shrubbery, and stage and/or amphitheater areas for dramas and other language arts activities.

Curriculum and the Outdoor Environment

In general terms, infants are considered to be 0 to 18 months in age, toddlers 18 to 36 months, and preschoolers 36 months to 6 years. Motor and cognitive skills of children are considered in deciding which play areas are appropriate for older infants and younger toddlers.

In some child care settings, infants and toddlers are considered as one group, preschoolers through kindergarten age as another, and after-schoolers as still another. The planning of after-schoolers' environments will be discussed another time. During the infant, toddler, and preschool years, there are developmental milestones that make it difficult to design safe yet challenging play environments. Teachers should plan for the outdoor environment in substantially the same way they plan for the classroom, including the use of learning centers.

The playground should be viewed as a learning environment. Caregivers may plan to take advantage of the outdoor environment, alternating free play with teacher directed activities. Most preschool activities planned for the indoor environment can be taken outdoors with little revision. Two simple examples are (a) dramatic play using prop boxes (extra cleaning of props may be required as well as care in gathering at sessions end) and (b) block play, using inexpensive pine blocks made from leftover materials provided by local home builders.

Developing a Good Playground: General Considerations

Whether for infants and toddlers or for preschoolers, good playgrounds should be of an appropriate size. For infants and toddlers, care should be taken to provide a sense of security. Thus, a small fenced area (at least 80 square feet per child) separate from preschoolers is appropriate. Early infants require this degree of protection from the free-wheeling activity of older children. The more physically capable toddlers may need the challenges of the preschool play environment. Preschoolers require more space, at least 100 square feet per child. The space should allow two-thirds or more of the enrollment to play simultaneously on the playground and preferably all enrolled in the center. (Current California state regulations require playground space based on total enrollment, as do some other states). The Texas Department of Human Services specifies fence type and height as well as other basic requirements.

Site Selection and General Layout

Safety, maintenance requirements, and overall play value are affected by the site choice. The site should make use of any naturally occurring shade and should include an area of level terrain for climbing equipment and group games. Changes in level add diversity and interest; however, care must be taken to locate underground utilities and to avoid low, overhanging utility lines. The location relative to classrooms should not force young children to travel across great distances, for convenience means more time for play and better integration of indoor/outdoor activities. Space for equipment or surface material delivery should be provided, yet the area should be buffered from busy streets. The basic play area site plans show fencing layout, basic activity zoning, and equipment placement. The age ranges shown are approximate. The motor and social skills of children are considered when matching children to play environments.

The infant area may be designed like the plan shown in Figure 1. The tricycle track can be used by caretakers to push infants in their carriages around the outdoor area and later for infants and toddlers to learn to ride wheeled vehicles. Most importantly, it links the play areas and invites children to sample the delights of a well-conceived playground.

The toddler play area is similar to the infant area in many respects but provides more elaborate, larger structures to accommodate children who are physically larger and have more highly developed motor, cognitive, and social skills. An example of a playground design appropriate for toddlers is shown in Figure 2.

The preschool area will vary greatly as site features dictate, but Figure 3 provides some basic parameters. If space permits, the wheeled vehicle track can be expanded to allow children to tour interesting areas of the playground and pass by dramatic play equipment (e.g., playhouses) where wheeled vehicles can be incorporated into dramatic play (e.g., service station).

Selecting Play Equipment

Commercial manufacturers are good sources of playground equipment, especially for large, complex devices such as climbing structures and swings. Some manufacturers provide equipment and material for dramatic and construction play in addition to equipment for exercise play. Although the cost of commercially produced equipment is typically higher than self-made equipment, the advantages of warranty, published specifications, and engineered materials should be considered. Most commercial manufacturers publish catalogs describing their wares and have representatives in various areas of the country. The buyer should be cautious in selecting equipment because some manufacturers offer hazardous equipment designed decades ago (Frost, 1990).

Sources for professional assistance in playground design include local or regional manufacturers, architects, custom builders, and playground design consultants. The variety of services from these sources is great, ranging from custom design of the total play environment including landscaping, to equipment design and construction, to construction only. Key factors in screening and selecting these sources are (a) awareness of and demonstrative adherence to the Consumer Product Safety Commission (CPSC) guidelines, (b) warranty and service, (c) knowledge of child development principles, and (d) customer satisfaction (check references and visit sites). The consumer must study carefully any written materials provided by the designer/builder and must also visit and evaluate their existing projects.

The use of parent or other volunteer labor should not replace the planning and design skills of experienced playground professionals. However, with appropriate direction, volunteers may be able to do a majority of the work in creating appropriate play environments. With careful, informed selection, professionally designed and constructed climbing equipment and swings can be wise investments.

Cutting Costs

Costs can be minimized during the design phase by becoming educated consumers and learning about safety requirements from such sources as the CPSC guidelines and other publications. The consumer should study options and read widely before contacting a playground consultant. Analysis of site options, utility plans, landscaping options, and fence types can be conducted by the consumer in preparation for a formal design process. The consumer can determine the need for professional design services and begin to screen for these services. Fees, experience, manufacturer affiliation, and reliability of service should be considered in selecting a consultant.

Many of the features of good playgrounds can be built by people with limited expertise in actual playground construction. For example, sandboxes can be constructed from landscape timbers, and tricycle tracks can be laid out in concrete, asphalt, or even old conveyor belt material. Shade structures can be erected, garden plots can be prepared, loose parts can be collected, and old boats or cars can be made safe and secure. Certain aspects, however, require professional expertise. Equipment manufacturers and experienced playground designers are valuable resources in screening, selecting, or designing the climbing structures (superstructures) and swings for the playground. The resilient surfaces must be well-planned and professionally installed. Center personnel and children can assist in planning and in some aspects of construction, but expert advise or extensive study are required to design and develop playgrounds that meet minimally accepted safety standards (e.g., CPSC guidelines).

Cost may be minimized during the construction phase by locating construction expertise among parents or in the community at large. Many groups are willing to donate use of heavy equipment for leveling, digging, or paving when the project is for children. Donated labor or material must be screened carefully to ensure that it complements the overall effort and is safe.

In both building equipment and purchasing manufactured equipment, savings can be realized when the consumer installs equipment and performs other labor intensive jobs such as preparing the site and installing resilient surface materials. This is not to suggest that these tasks require no expertise. They do. Most manufacturers provide detailed installation instructions, and a few offer the services of trained installers to supervise volunteer labor. This supervision can ensure that equipment is installed properly and will eliminate the possibility of a warranty being invalidated. Experienced supervision will maximize the efforts of volunteers and speed up the installation process. If someone other than the equipment manufacturer or

their representative installs the equipment, instructions must be followed explicitly. The CPSC guidelines, Texas Department of Human Services guidelines, and other reference material should be consulted.

Finally, maintenance costs can be minimized and accidents can be reduced by conducting safety checks on a regular basis (once a week) and by repairing broken or unsafe items as soon as they are discovered. Some companies offer maintenance contracts that, depending upon available resources, may be a viable way to ensure proper, regular maintenance. Safety in the playground should begin with the teacher and the children. Early in the school year, children should be trained to survey the playground for foreign objects in the fall zones, vandalized equipment, broken fencing, or other irregularities. All caretakers or teachers should attend an annual workshop on playground safety and supervision.

Playground Safety

None of the above described qualities of good playgrounds can be considered independent of the issue of safety. The most complete and creative playground will cease to be used if it results in injuries to children. Thus, safety is of primary importance. Safety cannot be assured by initial design—it must be an ongoing effort. Maintenance can help, but awareness of the continued upgrading of safety guidelines must be coupled with willingness to make changes as new information about injuries is made available. Current CPSC guidelines provide critical direction in designers' and owners' pursuit of safe environments, but revisions are being formulated (Frost, in press). The prudent consumer will stay abreast of these developing guidelines and be prepared to upgrade. Good playgrounds are never finished. The initial design phase affects the safety of the playground. Of critical importance is the elimination of undue hazard from falls. Falls onto the ground surface account for about 90% of the serious injuries recorded on American playgrounds (Tinsworth & Kramer, 1990). The choice of a surface material is perhaps the most critical safety decision. Cost, maintenance, availability, and personal choice must be weighed. Generally, manufactured resilient materials incur high initial cost but have low maintenance costs and performance advantages. Common inexpensive choices in Texas are coarse sand or small, washed pea gravel (less than 3/8" in diameter). Sand is preferred over pea gravel in environments for infants and toddlers due to their tendency to put pebbles in ears, noses, and mouths. Sand is an excellent play material; pea gravel is virtually worthless for play. Despite the cost of manufactured cushion materials, their use is increasing. Several such products exist on the market. Whatever material is chosen, adequate depth must be maintained in order to ensure the desired resilience. Eight to ten inches of noncompacted sand, pea gravel, or selected shredded wood products, maintained regularly, are appropriate for preschool playgrounds.

Falls can result in injury before the child hits the ground cover. The child may fall onto equipment on the way down or on hard objects left in the fall zone. This is usually due to faulty equipment design. The consumer must examine equipment or equipment specifications carefully in advance of purchase to protect against poor design. Clear space for jumping or accidental falls should be ensured through proper design and maintenance. Traditional monkey bars (jungle gyms) with a matrix of rungs is a common violation. Allowing children to climb on top of overhead (horizontal) ladders exposes them to potential crotch or head injuries from falling onto bars. Balance beams at the base of climbing equipment, exposed concrete footings, metal rungs at the ends of overhead ladders, and exposed ground supports for climbers are other common examples of safety hazards.

Poorly designed equipment can facilitate falls in a variety of ways. Narrow slides, especially those with a ladder approach (narrow deck) or lack of protective railings, force young children to make a precarious transition from standing to sitting and limit the child's options. Wide slides from platforms meeting CPSC guidelines are much safer. Some climbers (e.g., arch climbers) lead children to unreasonable heights and by design invite them to stand and walk on narrow rungs with precarious footing. Unfortunately, some current national manufacturers' catalogs offer such unsafe designs available for purchase (Frost, 1990). It is important to look carefully at the ways in which the age group considered may use or misuse the equipment to be chosen.

Entrapment of body parts poses another critical safety concern. Openings 4" to 9" may allow a child's head to enter and become stuck, resulting in severe head or neck injuries and even death. Exposed or protruding bolts or extensions can entangle clothing, resulting in asphyxiation. Exposed openings of pipe allow fingers to be inserted and may result in injury and even amputation. Ropes and cords not attached at

both ends and incapable of forming loops should not be left on unsupervised playgrounds; play with such items should be carefully supervised.

Other common safety hazards found on play equipment include rail barriers on climbing platforms that are too low and/or that allow children to climb easily over them and rotating swings with inadequate clearance between supports and other objects in the path of motion. Swing seats should be constructed with lightweight, resilient materials. Wood, steel, heavy plastic, and animal-type swings should be avoided. Such swings have resulted in fatalities, brain damage, and blinding of young children. Heights for climbing equipment should not exceed the reaching height of the intended users, thus ruling out climbers with attainable heights of over 6' for preschoolers.

A far too common sight on the playground is an exposed concrete footing at the base of a slide or climber. These may have become exposed over time due to improper installation or the lack of maintenance in the face of ground erosion. Concrete footings should be installed 4" to 6" below base ground level to avoid later exposure. Exposed footings should be removed, and proper installation should be performed.

Burns from metal equipment (decks and slides) are a growing concern, with over 300 children admitted to emergency rooms in 1988 for treatment of thermal burns sustained in playgrounds (Frost, in press). Infants and toddlers are especially vulnerable for they lack mobility and logic to protect themselves. Recent burn incidents involving toddlers revealed that they may "stick to the metal" until an adult rescues them. Lacking cause-effect thinking, or perhaps in shock, they may suffer extreme burns requiring plastic surgery. The simple, reasonable conclusion is to avoid bare metal playground slides and decks or provide shade. Decks may be covered with outdoor carpet. When purchasing slides, select the new, properly designed and constructed space-age plastics.

All equipment elements should be inspected weekly to identify excessive wear, broken or missing parts, ground cover in need of maintenance (especially in high-impact areas such as under swings, fireman poles, and exits of slides), polluted water, toxic materials, unfenced electrical apparatus (e.g., air conditioners), and trash. Teachers and older children should be trained to watch constantly for such potentially hazardous items. Repairs should be made immediately. The entire process—teacher training, maintenance checks, repairs—should be documented. Poor documentation may be considered evidence of poor care.

Liability

A very real concern is the threat of lawsuits over playground injuries. Everyone involved in the design, installation, construction, maintenance, and supervision of play equipment and playgrounds is subject to legal liability for injuries to children resulting from lack of reasonable care. Reasonable care and intelligent choices rest on an adequate information base. Those included in playground design and use must be familiar with several sources of information. State departments of human services are charged with overseeing regulations for playground safety for licensed child care centers (Wallach and Afthinos, 1990). When safety regulations are not enforced, children are vulnerable to injury, and child care centers and schools are vulnerable to law suits.

The guidelines that are most frequently relied upon in legal litigation are those published by CPSC (CPSC, 1981). The consumer/purchaser should not merely trust manufacturers to follow these guidelines but should conduct personal checks and consult with professionals to ensure compliance. With wise planning, appropriate use of expertise, and regular playground maintenance, the consumer can achieve reasonable levels of liability risk and at the same time reduce likelihood of injury to children. A checklist should be used to document the maintenance program. The Texas Department of Human Services distributes a checklist and related training videotape that are used widely in child care centers.

Summary

Playgrounds are rapidly taking their place as important learning environments for children. With thoughtful design they offer fun and excitement as well as opportunities for learning and development. Research has established play as a crucial process for child development, including cognitive, social, affective, and motor development. Both outdoor and indoor play environments should be designed to ensure novelty, challenge, variety, complexity, and safety.

Playgrounds for infants, toddlers, and preschoolers should accommodate object exploration (infants), exercise play, constructive play, dramatic play, and simple games activities. In addition, they should have storage facilities for loose parts (portable materials and equipment), wheeled vehicle tracks, structures for motor activity and make-believe play, natural areas, gardens, sand and water play, and pets. The issues to be considered in playground design include space, site selection, preservation of natural features, zoning of equipment for challenge and safety, and location of special features—fences, storage, tracks, hills, gardens, etc. Play environments should be beautiful, that is, appealing to children's aesthetic sensibilities.

The three major options child care directors have for developing playgrounds are (a) designing and building with volunteer labor and professional supervision, (b) using local custom designers/builders with proven expertise, and (c) using manufacturers in design and equipment selection. The first option is the least expensive and usually carries greater risk for legal liability. Either of the three options, carefully exercised, can result in playgrounds with high play value and low safety risk. On the other hand, either of the three options, poorly conducted, can result in uninspired, sterile, hazardous playgrounds. The key, indispensable element is expertise.

Playground safety is an issue of great concern because over 200,000 children in the United States are admitted annually to emergency rooms for treatment of playground injuries (Frost, in press). Most can be prevented by conforming to CPSC guidelines and by using informed practices in design, installation, maintenance, and supervision.

Playground Equipment Definitions

activity panels – panels with textures, colored surfaces, mirrors, and wheels to spin

arch bridge – porch-like overhang with arched shape

bell station – set of bells for children to ring; teaches auditory discrimination

bubble wall – clear, plastic panel formed with a concave surface

crawl tube – circular, plastic tube or tunnel for crawling

elbow tunnel – a curved crawl tube

elevated water table – permanently attached water table at child appropriate height

funnel – funnel-shaped pipes for sand play

house pump trough – hand-activated water pump on a wooden deck

infant tire swing – tires suspended at appropriate heights for infants; allows only to and fro motion

interchangeable – allows easy exchange of different swing types

ledge – low table fixture for sand play

mini PM wall – same as a perceptual motor wall but sized for infants

mini totem – climber requiring greater than usual eye/hand coordination; specifically designed for toddlers

mirror wall – mirrored surface on a vertical plane

oblique ladder – ladder at an angle for access to elevated play structure

perceptual motor wall – climbing option requiring eye/hand and eye/foot coordination; requires fine motor skill

playhouse – child-sized house for dramatic play

pull-up bars – bars for infants to grip; assists in walking and is used to pull upright

ramp – inclined surface used as access

rubber safety surface – impact-attenuating surface; washable

sand funnel – funnel-shaped pipes for sand play

sound cylinder – cylinder containing materials that create a variety of sounds

steering wheel – play device for dramatic play

swing beam – lateral (horizontal) support beam for swings

tarp roof – canvas-type material used for shade (plant nursery-type netting may also be used)

telephone lines – plastic pipes that allow children to talk to each other across the playground

tipping trough – trough designed to tip; allows creative use of elevated water course

totem – same as mini totem but designed for preschoolers and after-schoolers

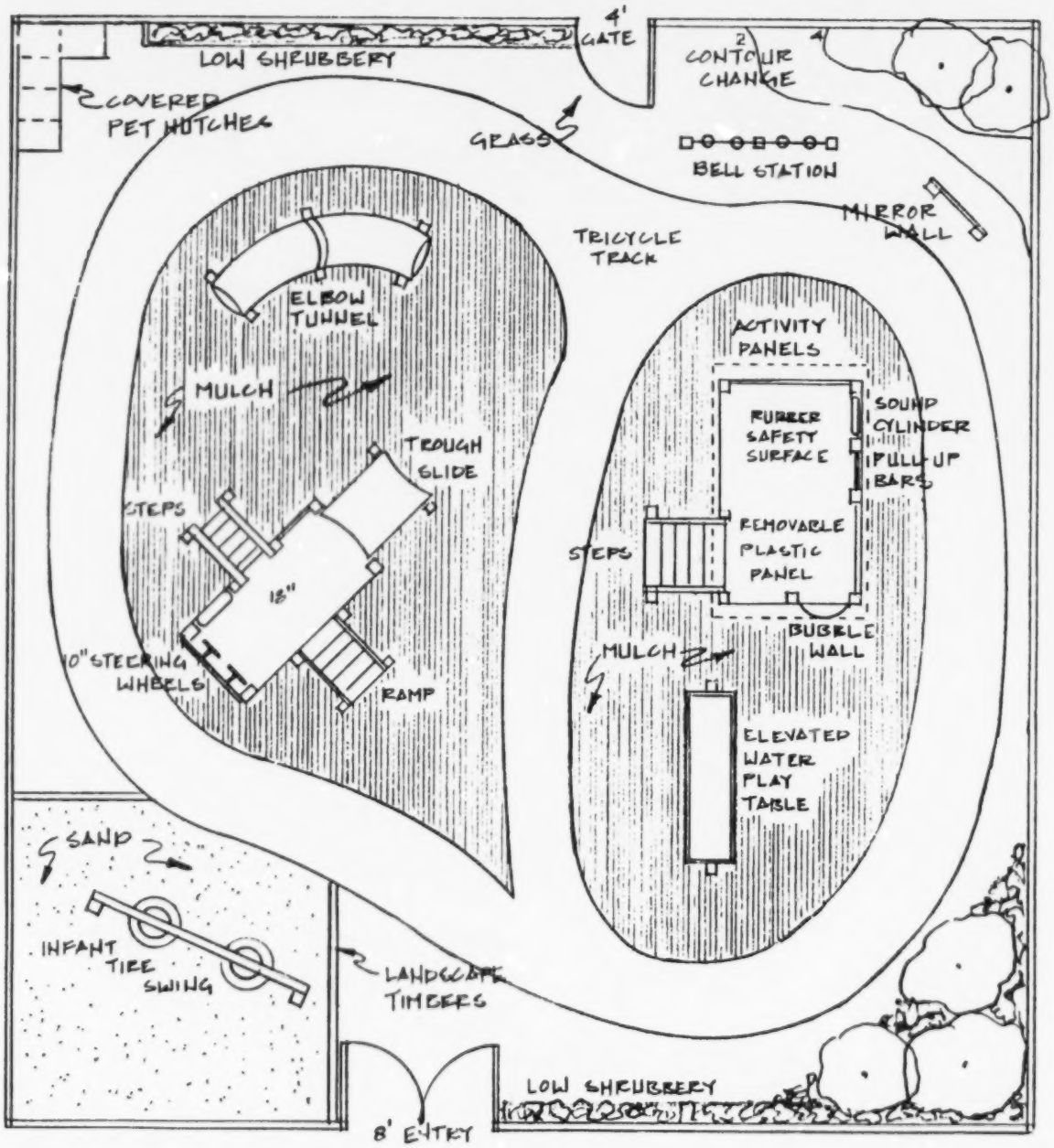
tot swing – swing with safety belts for toddlers

tricycle track – hard surface to accommodate wheeled vehicles such as tricycles and wagons; may be constructed from old conveyor belts, concrete, or asphalt

trough slide – slide with bedway shaped as a *U*

tube – crawl tube

tube slide – tube-shaped slide



TYPICAL PLAY AREA
6 MONTHS TO 24 MONTHS

Figure 1

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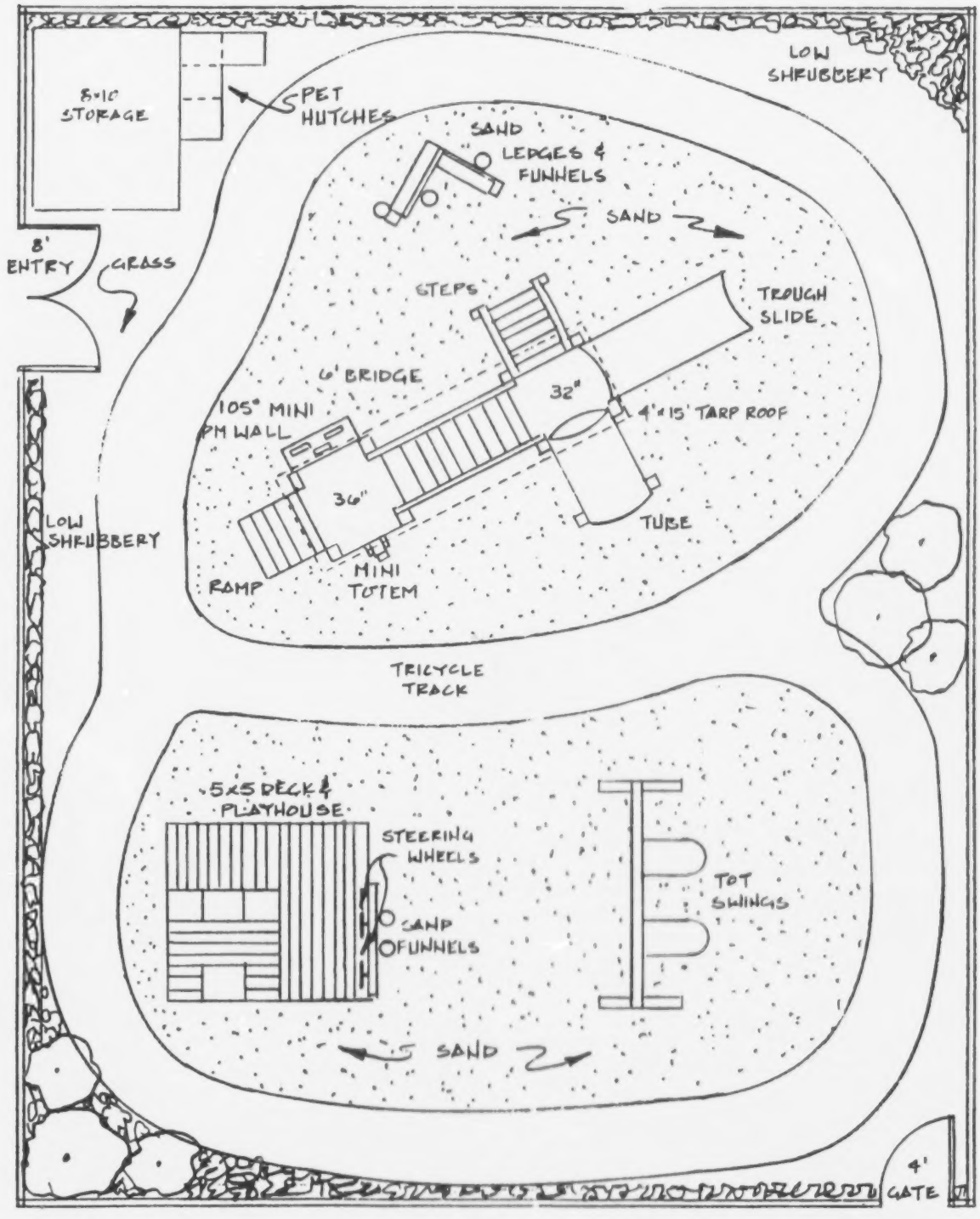
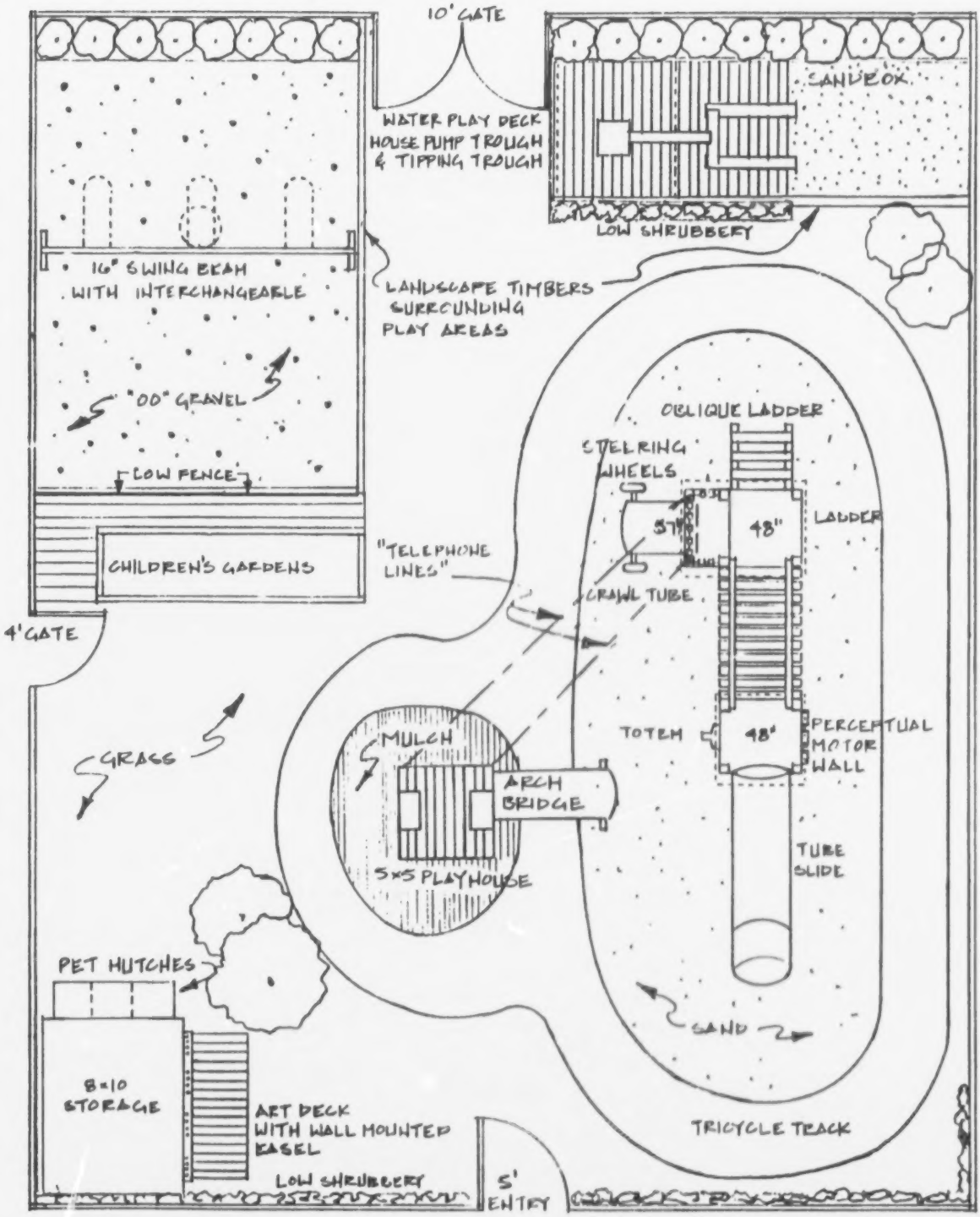


TYPICAL PLAY AREA
24 MONTHS TO 36 MONTHS

Figure 2



TYPICAL PLAY AREA
3 YEARS TO 6 YEARS

Figure 3

BEST COPY AVAILABLE

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